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A detailed discussion of recent research on student characteristics and the implications of this research for admission policies. Also discusses the implications of research dealing with personality measurements as they relate to the problems of improving the educational process.

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A RESEARCH ORIENTATION TO SELECTION, ADMISSION AND DIFFERENTIAL EDUCATION

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Several members of the staff at the Center for the Study of Higher Education have at one or more times, addressed themselves to the matter of student body composition, to topics related to admission policies, and to various aspects of student behavior, especially as viewed in an academic context. To judge from a few reactions to our own previous comments, we may as well have been "voices in the wilderness"; but since neither of us has been directly involved in educational planning or in college admissions work, what we suggested might have seemed too far removed from the practical situation. We hasten to add that our role, along with that of other advisers "from the outside" who have crossed the educational horizons of the present day, has been one of raising questions and issues generally in accordance with the background of our own discipline, in the hope that we may give those involved in decision-making a broader basis for both policy and practice.

For various reasons and in a variety of ways, higher education is and will continue to be in a stage of rapid transition. Administrators at many levels are being called upon for new decisions and for leadership in new directions. Over the last several decades the world of business and industry has increasingly sought the aid of specialists from many disciplines in education; for example, social scientists have been employed as consultants on problems of human relations, on executive and employee selection, and for help in other problem areas. Often these experts from the nation's colleges and universities encouraged industrial management to institute experimental programs to study their difficulties and to determine bases for new employment procedures. It seems odd that the same consultants were seldom or never asked to consider problems of administrative tactics and administration-faculty relations in their own institutional bailiwicks or to assist in devising research procedures to study the admission of students, rate and pattern of withdrawals, etc. Needless to say, some research on admissions and withdrawal problems along with predictive studies has been done, chiefly by those personally involved with the everyday problems of selection and admissions, but with concern for relatively few variables, and often the same ones from school to school.

Currently, the situation is considerably different. What we would judge to be important research on college students, on their backgrounds and reasons for going, on their general growth and educational development, is underway in every region of the country. Reports of new projects and requests for some attention to research design and methods of measurement come along month after month. In fact, the need for a variety of additional information about students is well ahead of the methods of measurement and evaluation. It is, of course, questionable that measurement tools in any science are ever at the point of development that an emergency would demand. This also applies to the need for theory which supports research design and which has the essential scope to encompass a broad problem area.

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The study of the student, which has attained renewed emphasis in recent years, has many precedents. The developments most recently giving impetus to current research on student characteristics have been reviewed in a variety of reports in the past two or three years, some of which will be found in the readings submitted for this conference. There are a few threads running through some of this research history which provide a setting for most of the projects underway today.

In the field of psychology, the study of individual differences has a history going back to the previous century. But a good deal of what passes as education even today reveals a great unawareness on the part of many educators of the important differences among human beings. Educational procedures are advocated and a great many instructors teach as if students were essentially of one mold. It seems that much of what might be profitably borrowed from this phase of the psychological discipline, that is, individual differences, remains to come.

Other precedents to the present research include numerous investigations in student personnel work in general, investigations in counseling and therapy, new and improved instruments of measurement, methodological developments in testing, and the resolution of some problems of measurement. For example, the student personnel services have been instrumental in helping us to understand the difficulties in effecting change and the re-education of attitudes in college students; they have also contributed greatly to understanding the factors underlying occupational choice. As much as any single professional group, they have been in the forefront in overcoming opposition to psychological research and in obtaining a variety of measurements on large samples of students on campuses throughout the country. Other researchers, in the areas of psychology and educational psychology, have been constructing scales or tests to improve the measurement of important characteristics. The few scales we mention later in this paper depend upon previous work by contributors from a number of special fields, ranging from psychiatric diagnosis to developmental psychology.

The most fundamental and pertinent ground work underlying recent developments is found in the few intensive studies of student development on a number of campuses. These have been conducted over two decades and are too complex to even describe briefly here, but a rather adequate picture of some of the most important of these contributions could be identified by noting the work of men on the program of this conference.

Personality measurement--prediction versus understanding

For the specialist, "personality measurement" usually implies use of certain kinds of tests such as true-false attitude inventories, measures of the strengths of beliefs, and projective devices. "Personality" measures have been described as "non-intellective," "motivational," and

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so on, in order to distinguish them from aptitude, achievement, or other "cognitive" or "intellective" measures. For the specialist these labels may serve a useful purpose--for the educator generally, they must certainly be confusing. It has been shown in numerous studies that cognitive characteristics are inextricably confounded with the motivational and affective aspects of the developing personality. In other words, belief, attitude and desire are not independent of ability, aptitude, and achievement, even though the relationships among such characteristics may be complex or obscure. This poses some interesting problems if we wish to improve the educational process so that the general development of the college student as a person receives more attention.

Certain attitudes toward studying and the habits utilized in preparing course work assignments are known to be related to grades obtained. Some kinds of expressed interests, including intellectual interests, are directly related to grades; and some general measures of temperament and personal maturity have small correlations with the academic average. The typical reaction after finding that high school grades and aptitude measure are better predictors of college grades than are these "motivational" measures, however, is to disregard the latter. Two points can be made relative to this: (a) it is possible to improve motivation measures so they will significantly improve the prediction of grades; (b) as they have been used traditionally, grades are hardly worth predicting with greater accuracy, especially if educators increasingly focus their attention upon the problem of the students' general development. In other words, two research strategies evolve: we either can accept grades as the limited criterion of development which it is appropriate to strive to predict, or we can turn our attention to devising better criteria of development. In fact, it might be feasible in some institutions either to improve the evaluative procedures in such a way as to broaden or to enhance the meaning of assigned grades, or else to experiment with other criteria of student development, along with the traditional grade-point-average. Different research strategies will have different consequences in relation to educational philosophy and policy.

If the same effort had been expended on the development of attitude and personality predictors, as was focused on the so-called "intellective" measures during the last 30 years, then we should now have some attitude scores which correlate very well indeed with grades. However, we do not necessarily subscribe to this kind of approach. There is little doubt that predictions of academic performance of a very high level of accuracy could be obtained, permitted all the essential procedures. To predict college grades, we need only to "standardize" predictors which take into account more and more of the subject's history, at the same time standardizing the criterion of academic performance, so that it is more and more congruent with the predicting measures. We submit, however, that such procedures might add very little to our understanding of student development or the overall educational attainments. Understanding a phenomenon implies its

predictability, but the converse is not true; predictability is an insufficient condition for understanding. The current emphasis on prediction of behavior in social science may be a healthy one, insofar as it encourages isolation of diverse and reliably measurable aspects of behavior; but it also appears to be a kind of fetish supported by classical philosophy of science. What appears to be needed is more understanding of human behavior, of growth and development, and of the processes of attitude and value change.

A very important aspect of personality measurement has to do with the level of generalization at which the data are interpreted. For example, an investigation might measure subjects for their degree of compulsiveness--using items which reflect the orderliness and promptness of their daily behavior. Or, the interest might instead be centered in a larger syndrome of behavior, known as authoritarianism or stereopathy, which is made up of at least eight different traits, only one of which is compulsivity. Because of modern techniques of test development the subjects might be ordered, from low to high scores, equally well on either a single trait of this syndrome, or on the total syndrome. Several general but basic personality syndromes of considerable interest to psychologists and educators have been delineated within the total personality structure. Independent work by numerous investigators has supported their identification.

There are some important issues which must be considered by those who would like to use general attitude measures among the criteria for admission to college. One issue has to do with the social function of the college. It is known that persons high on general social and emotional maturity are more independent, imaginative, and tolerant of others, and also that they are likely to be more capable and intelligent. If the function of the college is to inculcate and to encourage the development of traits such as independence, imaginative thinking and broadmindedness, then it can be argued that persons low on these characteristics should not be denied admission; if the purpose of the college is primarily to advance the sciences and the arts (we know of no such institution), then the inclusion of such personality measures among admissions criteria might be defended.

In any case, the problem of education for freshmen students already admitted can be attacked more rationally if their level of general maturity of attitudes and values is known. There is now quite a bit of evidence that certain kinds of educational techniques work well or less well, depending on the level of personality development of the students. For example, in actual experiments, highly developed students are capable of more initiative under less supervision, because they are more independent, more imaginative, and so on; but, the more immature students feel that they need to be told exactly what to do (Stern and Cope, 1956). Whether or not personality measures may feasibly be included among admissions criteria, we have suggested that they might

be a real help subsequently in differentiating among enrolled students and thus increasing the efficiency of the educational program itself (Heist and Webster, 1960).

The measurement problems per se inherent in the study of educational development are serious and difficult, and they certainly have not all been solved, even though some progress has recently been made toward their solution. Mental test scores are ordinal data, in that they order persons but do not provide a metric which tells us how far apart the subjects are on the underlying continuum. This makes it impossible to compare exactly student A's change during college with student B's, or class C's change with class D's. Nevertheless, change scores can be compared, if they are reliable enough initially, by introducing certain kinds of measurement assumptions. Solutions depend directly upon the development of appropriate definitions of measurement error; some definitions have been tested empirically so that in the case of mental tests one solution is known to be more realistic than others (Lord, F.M., 1959). Therefore, we soon hope to be measuring personality development during college with reasonable exactness.

Student characteristics and admissions policies

The great diversity found in American higher education, in both type and quality of institution and among students in the variety of institutions, need only be referred to here. (Several of the references submitted in the Institute bibliography examine the fact and meaning of this at some length.) Due to the existing diversity, problems of admissions at particular institutions must be dealt with rather specifically. Though the issues may be generally similar across a great many institutions, for a certain number of institutions the issues are unique. Beyond the matter of sheer size and the public-versus-private distinction, the variations in the implicit objectives and purposes of different colleges necessarily require that they receive individual consideration.

A digression relative to the existing diversity may serve illustrative purposes. Most of the research reports in recent years do relatively little to counteract Jacob's (1957) conjecture that the educational impact on the majority of students is rather minimal. Both the results of the Vassar research (Freedman, 1960; Webster, 1958) and more recent findings at the Center at Berkeley (Webster, Freedman and Heist, 1961) show that some students do undergo change, but the number who change in any significant degree is not very large and the reasons for this can generally be traced to factors preceding or lying outside of the immediate academic context. The factors of the institutions as organization, their educational procedures, and the student attitudes and behavior do not, in most cases, provide a combination leading to optimal education or the attainment of stated objectives. If we may assume that critical thinking, aesthetic appreciation, and a greater

devotion to learning are possible for much larger numbers of students, then, either the conditions provided for learning or else the learner are found very much wanting.

Looking at the educational environment for a moment, there seems to be little reason for elation. Administrative leadership in colleges and universities only infrequently leads to progressive changes or improvements in the intellectual atmosphere and the promotion of true scholarship within an institution. The conceptualization underlying most decisions appears to be mechanical rather than philosophical, often meeting the demands of immediate problems and lacking in the perspective of long-range policy. One wonders how frequently the objectives of an institution and/or the actual learning and accomplishments of students (measured or unmeasured) are considered in resolving problems and in changing programs. Viewed from the standpoint of the faculty role, provocative and inspirational instruction is conspicously rare. National Merit Scholars, interviewed recently as senior in leading schools throughout the nation, repeatedly spoke of the poor teaching on the part of many faculty and the almost complete absence of effective instruction within some departments. An increasing number of faculty are supposedly becoming involved in improved education for students of superior ability, to judge by the large number of honors programs, honor seminars, and provisions for independent study in a variety of institutions, but the effectiveness of such instruction is generally unknown due to a lack of experimentation and evaluation within such programs.

To match the lack of administrative and educational policy, the inadequate provision of facilities, and the woefully small number of faculty who are both capable of and committed to more effective teaching, the available evidence indicates that the great majority of students enter post-secondary education with attitudes and interests significantly different from those of the small, intellectually motivated minority. It would be unfair to say that the mass of students are not motivated, but the character of their motivation is chiefly ulterior, utilitarian, and pragmatic - directed to more immediate, egocentric, vocational goals. Students probably should not be chided for this limited orientation, since in this respect they are essentially products of our Western society. We would be naive to expect more than this, to look for mature, scholarly individuals where so little in their backgrounds could have nurtured such an orientation. A "sin of omission" can probably be charged to the faculty who do not recognize the diversity in student attitudes and purposes, who do not face up to the major problem of understanding the characteristics of a student body and its pervasive student culture, and who often do not recognize the students' limited motivations in an academic sense. Not to be misunderstood, we should add that we would argue for the merits of a liberal and general education, in the best connotation of the term, for most students, and for objectives which bring to an academic community the satisfactions of knowledge, a greater understanding of life, and the experiences which would awaken

and broaden aesthetic sensitivities. Moreover, to bring this about we would harangue administrators and faculty to consider and reconsider the objectives of their educational program, with thought and attention given to the abilities, the attitudes and the major values of their particular students. There seems to be no alternative to such an approach in the light of the present inadequacies. If objectives are to be more than statements in the catalogs and if purposes are to become operational and congruent with the attainment of goals, more discernment must be given to distinguishing student traits and perhaps something should be done to alleviate the impersonalized and lecture-dominated approaches to education, which seem to flourish under conditions of increasing bureaucratization. We hasten to add that we are aware of the apparent anachronism of this admonition in this period of ever more students, larger classes and the televised lectures.

In this paper we will play a speculative game that members of our Center staff have resorted to on occasion. Our own large scale research on student characteristics is far from a state of completion; consequently, a certain amount of data will be used before all the answers are in. We will utilize information obtained from several projects underway, limiting ourselves, however, almost entirely to measures from one instrument for the sake of clarity. There are a variety of existing scales and inventories that could well serve the purpose of illustrating diversity and its implications. We are using these particular data because we are well acquainted with them and to avoid possible overlap with material that may be presented by other speakers on the program.

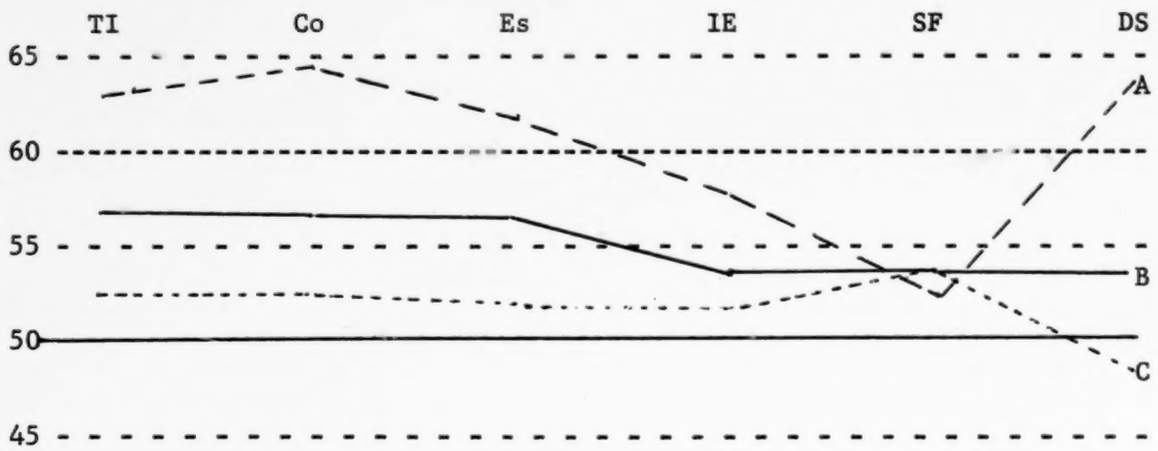

Figure 1. Standard score personality profiles representing the mean scores of entering students in three different four-year coeducational colleges, A, B and C. (The standard scores are computed by using a large sample of college freshman whose mean ability score is at the national mean for entering students.)

The profiles[1] of scores in Figure 1 represent three four-year, coeducational colleges, all of which are recognized as institutions of quality, all having strong programs in the liberal arts and sciences, and all sending large proportions of their graduates on to graduate schools. None of the three have been in the position to date of having four or more applicants for each student accepted. In these three colleges the mean ability score for entering students is well above the national freshman mean; however, the selection policy of the colleges is probably not as important in determining the type of student body as the factors which cause students to choose the colleges.

It is apparent on the basis of these measures that the three colleges, all with excellent scholastic reputations in the field of higher education, can be and are quite different in their student clientele.

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[1]Brief Descriptions of the Personality measures (Webster and Heist, 1959):

Thinking Introversion (TI): Measures an interest in ideas and liking for reflective thought, particularly of a more abstract nature. Thinking which is not dominated by objective conditions and generally accepted ideas. (Evans-McConnell)

Complexity (Co): Tendency to perceive and to react to the complexity of the environment, rather than to function at a level of greater simplicity. Characterized by tolerance for ambiguity and novelty. (Sometimes called "Complexity of Outlook." (Barron-Center)

Estheticism (Es): High scorers find value in form and relationships, seek major satisfactions in the "artistic episodes of life," expressed by literature as well as in art and music. (Sometimes called "Esthetic Orientation." Originated in studies of correlates of the AVL Aesthetic Values scale.) (Center)

Impulse Expression (IE): The general readiness to express impulses, and to seek gratification in either conscious thought or in overt action: high scorers characterized by ascendance, sensation-seeking, and radical sentiment. (Sanford-Webster-Freedman-Vassar)

Schizoid Functioning (SF): Measures degrees of social alienation and ego weaknesses, such as some confusion, disorientation, feelings of inadequacy and isolation. (Center)

Developmental Status (DS): An empirical scale for discriminating freshmen from seniors. High scorers are more like seniors, and they tend also to be high on Social Maturity and Impulse Expression. (Webster-Vassar)

Other measures or scales included in the personality inventory are the following: Liberalism (Li), Suppression Factor (RS), Lack of Anxiety (LA), Agnosticism or Atheism (AA), Couch-Kenniston (CK), Theoretical Orientation (TO), Originality (Or), Social Maturity (SM), Nonauthoritarianism (NA), Social Introversion (SI).

It has been shown that the varied characteristics of students are an important consideration in the scholastic attainments of the graduates of different schools (Holland, 1957; McConnell-Heist, 1959; Warren and Heist, 1960). The profiles of these three individual colleges do not contradict such findings, but they do show that graduates of colleges with considerably different student groups may and do go on in large numbers to advanced training. Whether the students from these colleges who continue their education represent the total gamut of the graduating populations, as typified by the personality profiles, or only segments of the respective student societies cannot be answered here.

As far as determining how these student bodies differ in their overt, observable practices, a good deal of the story is shown in these few scores. To comment briefly, college A presents the "seed bed" for the greatest intellectual ferment and enrolls many adventuresome young scholars, zealous to pursue new and different ideas, desiring to sample widely in the realm of knowledge, and willing to forego the activities of much of the "collegiate" culture found on many other campuses in order to find time for more academic pursuits. On a number of bases, the interested observer could detect that College C appears to be a progressive, on-going organization where numerous students are also caught up in the academic endeavor. But, one learns that a large portion of the student body, at various levels of ability, seem to have other commitments and are oriented in more conventional directions. The profiles of scores support the latter point, indicating that the great majority of students at College C are very different in their attitudes from the average College A student; in fact, over 85 per cent would have a general pattern of scores below the College A mean on four of the six scales in Figure 1, namely TI, Co, Es, and DS.

College B presents an entering class of greater variety, with numerous students who could successfully have enrolled in either one of the first two schools but not in both. The predominant student cultures in Colleges A and C are as diverse, perhaps more in attitudes and values than in social behavior, as the two profiles would indicate. The Institute paper by Martin Trow is essentially an examination of the cultural differences that might exist in campuses such as these two. A very minimal number of entering freshmen in either college would have considered enrolling in the other. However, quite a number from College B did consider A, some applying and gaining acceptance; a smaller number, and never the same students, from B gave some thought to attending C.

The picture of personality characteristics shown in Figure 2 represents the students in two coeducational colleges of average academic ability (D and E) and in one large public institution (F). The academic aptitude of the freshmen in this largest institution is the highest of the three. The students in institutions E and F are probably typical of the entering students in the majority of American colleges and

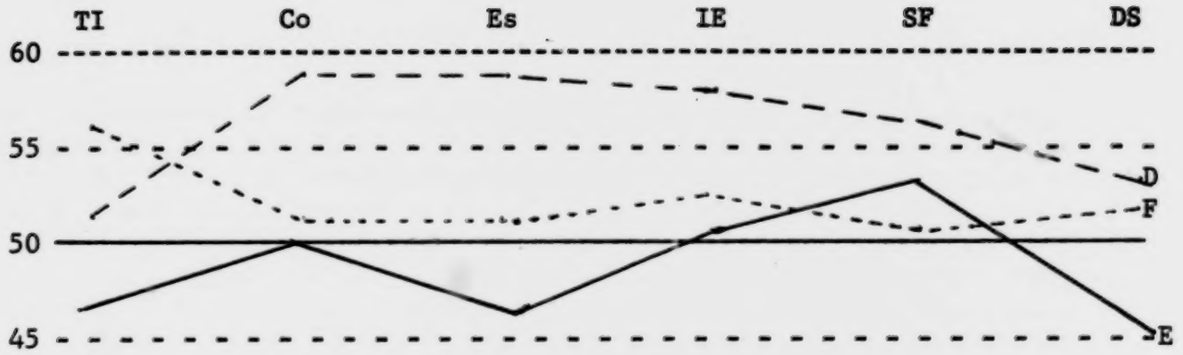

Figure 2. Standard score personality profiles representing the mean scores of entering students in two different four-year coeducational colleges (D and E) and in one large public institution (F).

universities in their ability, their general attitudes and in their interests in education. Those students selecting College D must be considered somewhat unique at this average level of ability, just as the College A students are also unique at a somewhat higher level. In public institution F, with thousands of students, we find the greatest diversity of college youth but only a surprisingly small number who fall above the mean scores of College D, except on the TI scale. The low scores for the latter institution (D) on Thinking Introversion support what has been observed through other approaches; but the general orientation and motivation of these freshmen is indicated by the high mean scores on four of the other scales. On the whole the College D students are much more dynamic and adventuresome than the average person in the other two institutions. The relatively high complexity and esthetic scores offer some evidence for an interest in ideas, in creative perspectives, and in new viewpoints, although for them this need not and does not lead to achievement in a grade-getting sense. From what is presently known about the students in Colleges D and E, it can be said that a great many in the latter school would find the student environment in D (or in A and B in Figure 1) very uncomfortable.

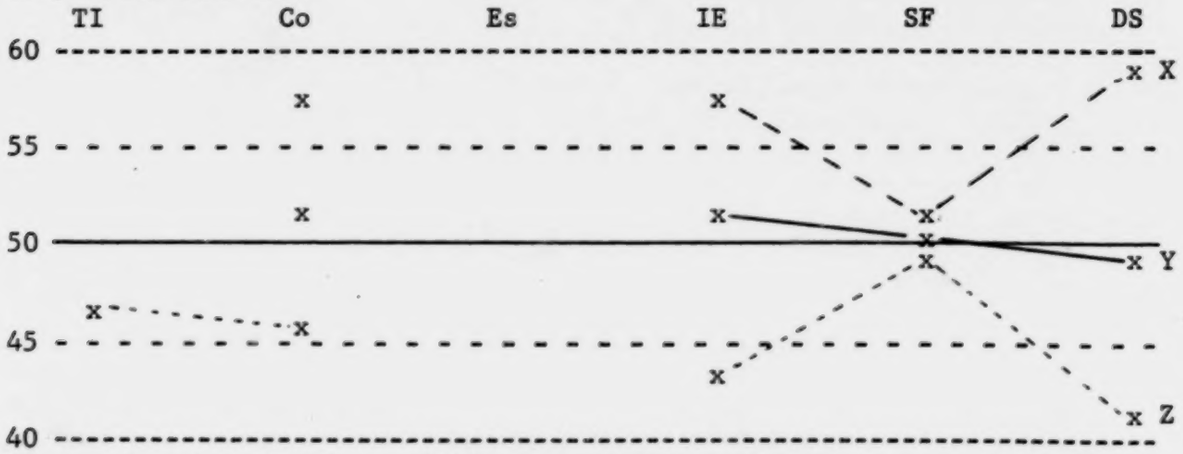

Figure 3. Personality profiles representing entering students in three private womens' colleges, X, Y and Z. (The reference group for the standard scores computed in this graph was a large group of freshman women of average ability.)

The few scores for private women's colleges in Figure 3 illustrate diversity among total student bodies even more dramatically. In each of the three cases, it is again more of a self selection process rather than an admissions policy that clusters these young people into rather distinct post-adolescent groups. It is appropriate that [illegible] philosophies and the program emphases of the three institutions allow for some real differences in what they desire or expect in the education of these young people, although the apparent similarity of explicitly stated objectives is, if not surprising, at least out of line with the student dissimilarities. All three colleges, according to their catalogs, aim to promote intellectual development as well as give attention to the emotional, moral, and aesthetic aspects of personal growth. They seek to instill and develop powers of critical thinking, to give a personal basis for decision making, and to provide knowledge and understanding of the world in which the students live. They also expect to inculcate appreciation of the values inherent in literature and the arts. It would be difficult to quibble with the general importance of these aims. One must recognize, however, that the aims cannot be realized in the same way in the two Colleges X and Z, in which such different attitudes and motivation prevail; nor could they similarly be realized in colleges as different as A and C in Figure 1. The complexity of perception and of reaction to the environment and the level of developmental status of the students in College X (scores are above the mean level of seniors in other colleges) provide a student culture greatly unlike that of College Z, or College Y for that matter. Chance enrollment of any X students in an institution like Z might well lead to personally intolerable situations. And the converse of that may be even more true. More important, we believe that the faculties in Colleges Y and Z, if they want to view realistically the college objectives, the students, and what is to be accomplished, should be aware that the objectives need to be re-examined in the light of the particular students who seek an education on their campuses. Perhaps a truly liberal education, resulting in changes of attitudes and values, is possible for many students in College X, but for many in College Z it would demand more personal re-orientation and a more potent educational experience than the overall environment can provide in four years.

The process by which students decide to enroll in the various colleges seems to be far from random. Judging by the profiles in Figures 1, 2 and 3, students seem to distribute themselves logically in a great many instances. Consequently, acceptance of or elimination by an admissions officer is not an identical problem in the great variety of colleges and universities. As admissions problems are increasing for more and more institutions, we may be approaching the day when students should be admitted with more attention given to the "personality mix" of the student body or to considering the major characteristics of the entering student in the light of the most prominent non-intellective characteristics of a student body. In reality, more and more colleges have been matching student and student

body on the ability variable, and some colleges always have drawn a majority of their students from a rather restricted background, such as a single socio-economic level or one religious denomination. We have no basis for arguing for great homogeneity on any characteristics, nor have our research findings given us a basis for estimating an optimum level of homogeneity-heterogeneity regarding student body composition. We would suggest, however, that there are various amounts and kinds of diversity which are essential to promote an optimum educational atmosphere on any campus. We surmise that many institutions have hampered students' education and their own progress toward becoming a "good" college by encouraging applicants from only one predominant societal subculture. This could be illustrated in numerous ways but need not be expanded upon here. A related perspective to these considerations is found in Clark's discussion of the "public image" of institutions (Clark 1960 (a)).

The problems of selection and admission can be highlighted by a study of the constituent subgroups in any of a variety of institutions. A number of colleges in the country which admit a great number of students scoring well above 500 on the College Board aptitude tests have been concerned over the number of failing and withdrawing students. The reasons for this reside in more than the measured characteristics of students, needless to say, but in line with this presentation it is informative to look at a situation in which both the ability and the general motivation of students is above average. A few questions will be considered that might be raised by admissions officers in College A, a place with a fairly homogeneous student body from the standpoint of academic aptitude.

In Figure 4, the mean profile for entering freshmen in College A is shown again as A_1. Any college would be delighted by the level of thinking and motivation implied by the scores in this profile, averaging a standard deviation above the college freshman mean on the six scales. Most educators would hope to have their seniors score this high on these measures at the time of graduation. If these scores describe the attitudes of the average student on this campus, how much deviation from these attitudes may the individual student exhibit and still compete academically and still live socially and emotionally with his peers in this environment?

Possibly part of the answer to the above question and some bases for taking a second look at selection criteria are indicated by the two other profiles in Figure 4. Both groups, A_2 and A_3, have been identified by criteria experimentally independent of these personality measures. The mean aptitude scores of both of these groups approximate the College A mean. The scores of the small A_2 group, in this case all women, represent colorful and interesting personalities; these scores identify them as unusual regardless of where they might attend college. Their high scores on the intellectual components, namely the TI, Co and Es scales, are overshadowed by the high--and possibly neurotic--degree

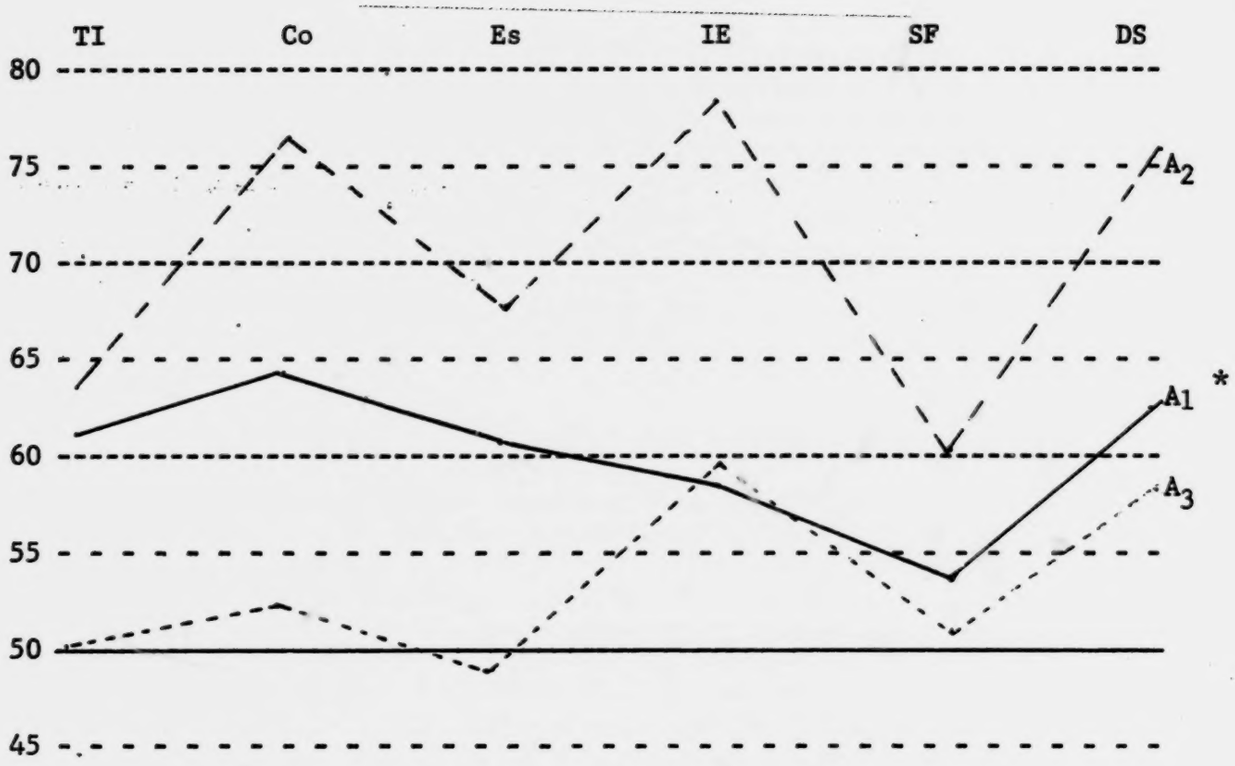

Figure 4. Personality profiles representing the mean of entering students and two small groups in college A (N of A_2 equals 5 and of A_3 equals 14).

*Freshman mean

of impulsivity and alienation, as shown by the scores on IE and SF. There is probably some disorientation, some isolation, and some rebellion, which prevents a disciplined approach in dealing either with themselves or their environment. One might view their profile entirely from the positive side in that scores approaching theirs are obtained by some students who behave in a scholarly fashion but who are unconcerned with grades. Group A_3 is different from the college mean particularly in the much lower scores on the intellectual triad, the first three scales. Their orientation toward knowledge and scholarly activity is at the average freshman level (norms) which for adequate academic performance might well be too different from that of the majority on this campus. Some time ago several of us speculated that students having profiles like the A_3 group, or like those in College C and Institution F, would experience real difficulty at a college like A, whatever their level of ability. This is, at least in part, the problem for people represented by both A_1 and A_3; although most of the A_1 group are generally successful at this school, members of both groups do not tend to stay. Before completion of the second year, the majority have dropped out or moved on to other campuses.

Without being more specific, we feel that the type of diversity illustrated in Figures 1 through 4 suggest the reasonableness of viewing some personality measures as developmental variables. The findings to date warrant the consideration and possible inclusion of some of these personality scales in experimental investigations of change in students' psychological behavior on a pre- and post-basis. We will have to admit to uncertainty about their possible use and value as selection variables for several reasons. However, on an experimental basis again there is little reason to discourage attempts at utilizing such measurement (in general) in selection procedures.

Personality measurement and differential education

It is with more real interest and enthusiasm that we view the problem of differential education. Whether or not more can be done about this in educational institutions than can be done about changing the criteria of selection will probably remain an open question, whatever we and other research personnel have to say. A concern for the diversity of educational objectives and procedures has been expressed in previous papers, and we will attempt to avoid redundancy (Heist and Webster, 1960; McConnell and Heist, 1961.)* We are all aware of the difficulties in attempting to educate all individuals to the maximum of their potentialities, which is always likely to be more a philosophical ideal than a reality. Effective education becomes more difficult because of the increasing numbers of students and the more specialized education which they require; the ideals and objectives of a liberal education are more and more the attainment of a dwindling minority. Though there is real concern about improved methods of education, about improved accommodations for students, about greater compensation for the educators, et cetera, optimum education for the individual appears to be losing out. The smaller colleges with rather well defined, monolithic programs seem to provide the most likely environment to offset some of the concomitant negative developments, in contrast to the expanded curricula but attenuated climates (for the individual) of large public institutions. A brief review of some of our concern for diversity within institutions can be accommodated with data again from College A and another college designated as G.

In Figure 5 you will find profiles of five scales graphed for three major subgroups in one four-year, coeducational campus. These groups, which are rather easily identified on the College G campus,

*Although we accept the responsibility for our specific statements in this paper, it is difficult to recall with certainty when some points are original with us and when they should be credited to other members of our disciplinary team. T. R. McConnell, chairman of the Center, has given the major impetus to the research on diversity in higher education and certainly has given some direction to the thinking of all staff members.

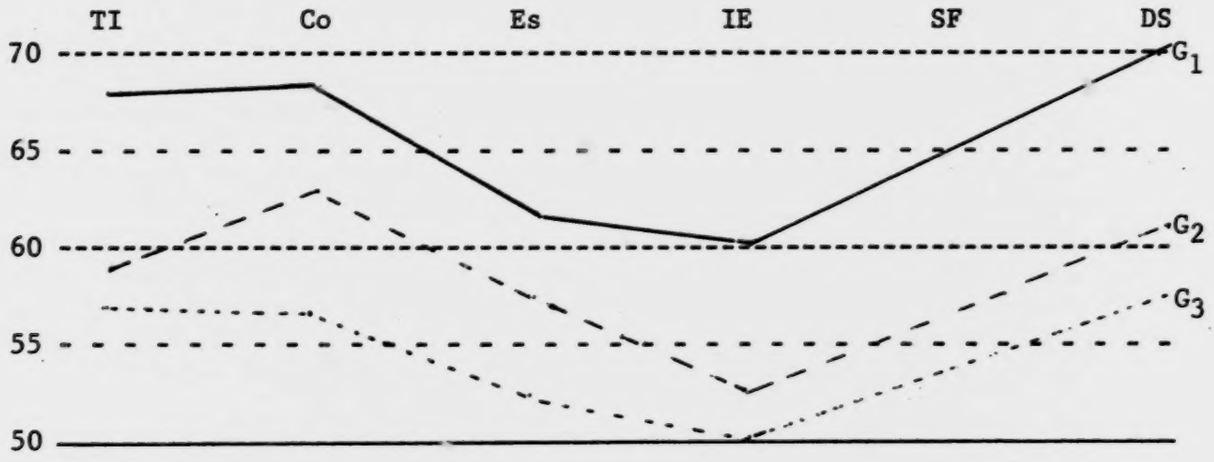

Figure 5. Personality profiles of three major subgroups found on one campus, College G, consisting chiefly of high ability students.

were categorized chiefly on the basis of major interests and affiliations and to some degree by residence. The three groups, all from one class, are made up of students of rather diverse attitudes and motivation and are actually somewhat distinct subcultures on this one campus. Obviously, the institutional admissions program must be using a number of criteria, which, implicitly or explicitly, provide the clientele who make up such diverse groups. They can be differentiated as readily on these psychological measure as can the total student bodies represented in Figures 1, 2 and 3.

College G provides a curriculum which is strong in the classical liberal arts and in the sciences, and it sends a large number of students on to graduate and professional schools. It also makes special provisions for the very capable students in a rather extensive honors program. On the other hand, there is not much provision for the development, and the more specialized education, of the artistically talented or creative, although an exception to this might exist in the field of literature and creative writing.

Very briefly, the profiles indicate that one large segment of the student body, namely Group G_3, has an interest in and a positive attitude toward the intellectual life somewhat above average (TI, Co and Es); the same is true of their score on the DS scale. Many a college of good reputation would not present a profile for the total student body higher than the mean scores on these four scales (Note Colleges B and C in Figure 1). But, significant for this group are the mean scores on the IE and DS scales. In this respect they look like many college students, and compared to the other two groups, they appear to be more contained, inhibited, less rebellious and more bound by societal sanctions. More than that, their intellectual orientation is not consonant with motivated experimentation in the world

of ideas, with any serious questioning of their own way of life, or with much cultural criticism. Group $\underline{G}_2$ most closely approximates the means of all entering students on the campus. In contrast, the $\underline{G}_1$ people are almost in a class by themselves. Although representing no more than a fourth of the students in this college, their general motivation, including intensity of thought and spirited animation, give a definite "tone and color" to the student body and to all campus life. In the language of Stern and Cope (1956), they are in varying degrees excellent examples of non-stereopaths or anti-authoritarians. Certainly some deviation from general behavioral norms is implied by the high mean scores on IE and DS, but, in their overall functioning this appears to be counter-balanced by the very high intellectual orientation.

One might ask how well the curriculum and the campus activities help or hinder the education and development of the individuals in all three groups. To what extent is the known conservatism of Group $\underline{G}_3$ challenged and opened to re-thinking? To what extent are such students actually brought to new and broader horizons? How much does the energy, the aggressiveness, and the intellectual potential of Group $\underline{G}_1$ affect other students? And does it interfere with their own education?

We are told that members of all groups go on to graduate school but that the largest numbers come from $\underline{G}_2$ and $\underline{G}_1$, in that order. Quite a number from both $\underline{G}_2$ and $\underline{G}_3$ enter professional schools, compared to almost none from $\underline{G}_1$. Individuals from all three participate in the honors program, but most honors students come from $\underline{G}_2$. It is not unusual for people from $\underline{G}_1$ to participate in honors seminars only to leave the program later and attempt to become involved in more independent study. Numerous upperclassmen speak of the general potency, along with the idiosyncracies, of the $\underline{G}_1$ people. A small sample of seniors stated that the greatest contribution in seminars came from the critical thinking of the $\underline{G}_1$ group and that the major influences for cultural and intellectual life on the campus came from members of the $\underline{G}_1$ and $\underline{G}_2$ groups.

We believe that knowledge of the measured diversity shown in Figure 5 might be profitably utilized. Some of the college's objectives will not be similarly appropriate for many individuals in the two extreme groups. Some students in the $\underline{G}_1$ category, and in $\underline{G}_2$ for that matter, exhibit a degree of liberalism, a level of cultural sophistication, and a real concern for social issues; and this is accompanied by a degree of maturity that may not be attained in a lifetime by some in the $\underline{G}_3$ group, or by the majority of people who complete four years in college. $\underline{G}_1$ and $\underline{G}_2$ persons enter the institution subscribing to some of the faculty's intellectual values and believing in the merits of knowledge and the attainment of a greater understanding of life; this remains only an unachieved goal, and all too often not a desired one, for many others. To suppose that the objectives of a liberal arts education are being achieved by all College $\underline{G}$ students certainly would have to be classified as a myth. However, we are not prepared to

say how the program in a college such as this one might be altered to better educate all these young people. That the program should be reconsidered and possibly altered from time to time we strongly recommend, as we would with any program.

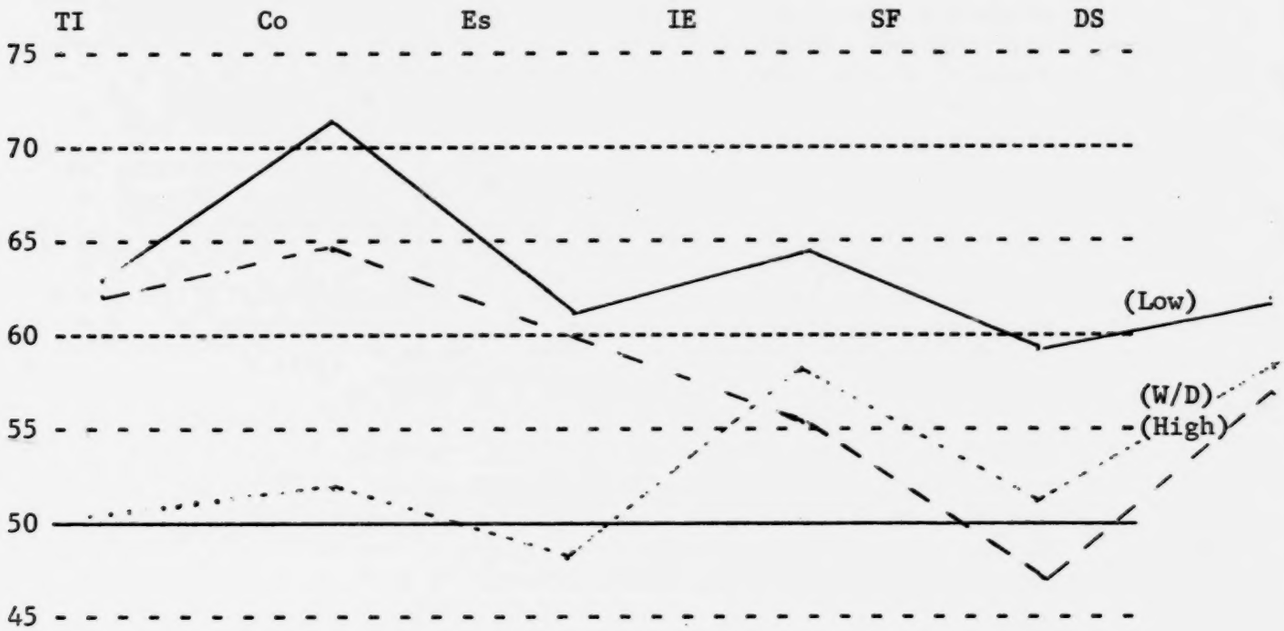

Figure 6. Personality profiles representing the mean of three groups in College A who are achieving at three different levels.

As a second illustration, in examing the problems of differentiated education, we note the measures for three subgroups in College A, Figure 6. The upper two profiles, in the left half of the figure, denoted as Low and High in the right margin, represent students matched for ability, with the mean ability scores falling near the average of the school (Heist, 1960 (b)). These students have been grouped, as Low achievers and High achievers, on the basis of their obtained grades. The lower profile, indicated by the W/D, represents students from the same class, whose mean ability score also approximates that of the class and the other two groups. (They were the A_3 group in Figure 4.) The total W/D group were identified as potential withdrawers; a large percentage of this lower group actually withdrew before the beginning of the second year. It is obvious that there is some relationship between academic performance and the measured attitudes and characteristics of these groups. The achieving group, from the standpoint of grades, possess the intellectual components, high scores on TI, Co and Es, but together with the lowest scores on the other three scales. The higher grades are achieved by students with what might be described as the more moderate profile on this campus, intellectual interests balanced by stability, personal

control and containment. Before we describe those represented by the upper profile, those getting the lower grades, as genuine underachievers or even low achievers, we might remind ourselves that the criterion was grades, presumably indicating the quality of their course-work. It is possible that this might be an unfair, or somewhat inappropriate criterion for this group, at least from which to infer overall achievement. These may be the kind of students which in one study were found to be most appreciated by instructors and described as the ideal, but nevertheless not receiving the highest grades (Brown, 1959).

The profile of the W/D group suggests that their intellectual interests are sufficiently different from a majority of students in the college and that their degree of motivation, which we infer from this triad of scores, does not allow them to "play the game" academically in this environmental situation. Most W/D individuals from this college, as already mentioned, do not drop out of education but transfer and complete four years in other less demanding colleges.

Again, we can ask about differentiation of program. As is the case for College G, this student body in College A can be described as much more homogeneous than in 90 per cent of American institutions. And yet, we believe that subgroups, and/or individuals, are probably being handicapped, to varying degrees, by being seen and dealt with as members of a relatively undifferentiated student mass. College A, like any other institution, should not be expected to educate all who enroll. It may be quite possible, however, that the criteria for assessing achievement in college are too limited (notwithstanding the arguments of expediency, objectivity and problems of evaluation), and we urge that it seems appropriate to utilize criteria other than grades for evaluating educational gains. The use of this single evaluative basis appears to be an injustice to many students. We would encourage more experimental investigations in education to determine what all the derivatives of college life may be and how they might be measured more objectively.

Returning to Figure 6, for example, the college might attempt to discover in some detail what are the differences in the more general achievement of the Low and High group. It is not an educational objective to make students all alike, and it seems desirable to bring them closer to their own goals, in line with the potentialities, attitudes and interests they initially bring to the institution. Educators should perhaps re-examine the objectives of specific institutions to discover which can be accomplished with the particular students involved. Greater attention should be given to the influence on the educational climate originating in the particular student body or in particular student subgroups. We should seek to know what it means for a student to live with individuals of a particular subculture, as a factor within a single institution. We might also give more serious thought to structuring honors programs and seminars, to

use one more example, with some attention given to the measured attitudes and interests of the candidates. Too often the criteria of ability and achievement have also not been adequate to this selective task.

Other implications and inferences that might be drawn from the data presented cannot be included here. Summary statements supplementary to our comments and conjectures will serve as a concluding overview.

Summary

Administrators and faculty who are initiating research on students and their education should be encouraged to analyze the objectives of their particular institutions. Concern with admissions policy and with more comprehensive evaluation of the immediate effects of education should revolve around the questions of "selection for what?" and "education for what?" That the single criterion of grades has been given such great importance appears almost incongruous to us, especially when we read the multiple purposes and objectives so eloquently set forth in institutional catalogs. Research should help in the determination of some of the important objectives, or outcomes of education, which also can be measured or evaluated, and it should help in discovering how this might be done. The devotion to grades reflects a concern for objectivity and parsimony but even were grades perfectly reliable, they are woefully inadequate for the task at hand.

In line with reviewing objectives, the actual diversity among students should be the object of more diligent examination. In those colleges where, during the last decade, the selection of students has gradually resulted in higher mean ability scores, the faculty continue to evaluate students just as they did twenty years ago. Increased attention to individual differences certainly will not simplify pedagogy, but we should cease to flatter teaching as an art, or a profession, unless we give more than lip service to its great complexity. To iterate, students at age 17 in College A are unlike students in College C on numerous characteristics despite common formative pressures from their general adolescent peer cultures. In the former case, a general readiness for education, for experimentation with ideas, and for change exists to a much greater degree in many other students.

Consideration for diversity, especially in the educational program, is probably of even greater importance in our larger, more complex, public institutions. The presence of important subcultures within smaller, private colleges is perhaps suggestive of the significant student subgroups existing within larger universities.

Educators and social scientists, administrators and faculty, should take a first, second or third look at the various procedures, from admissions to course evaluation, to see where one of the most tradition-bound institutions, especially where the education of students is concerned, might be freed from some of its historical bondage. Let us acknowledge that we educate some, perhaps many, quite well. Are we willing to diligently review how much better this might be done?

The differences among students in attitudes, values and other personality characteristics highlighted in a variety of recent research suggest that research plans in colleges should include analysis of the personality patterns and psychological climates of student bodies and the subgroups within student bodies. These climates, which result from the major attitudes, constitute facilitating or inhibiting forces in the intellectual life of a campus, and they may be understood, if not actually manipulated, in an institution's attempt to improve the educational process.